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CESARI AND MCKENNA, LLP
88 BLACK FALCON AVENUE
BOSTON, MA 02210

EXAMINER	
SINKANTARAKORN, PAWARIS	
ART UNIT	PAPER NUMBER
2416	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/691,830	INDIRESAN ET AL.	
	Examiner	Art Unit	
	PAO SINKANTARAKORN	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 9-30* is/are rejected.

7)☒ Claim(s) *5-8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 18, 25, 27, and 28 have been considered but are moot in view of the new ground(s) of rejection.

2. Claims 1-30 are currently pending in the application. Claims 29 and 30 are newly added.

Claim Rejections - 35 USC § 103

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-4, 12-16, 18-20, and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishwar et al. (US 2004/0017816) and Casey (US 2003/0142674) in view of Pannell (Newly Cited USPN 7,286,528).

Regarding claims 1, 27, and 28, Ishwar et al. disclose, in a data network comprising a plurality of nodes, a method for transferring data packets between a source node and a destination node contained in the network (see paragraph 34, lines 1 – 9), wherein the source node and destination node belong to the same particular virtual-local-area network (VLAN) (see paragraph 34, lines 6 – 7), the method comprising the steps of:

establishing a virtual port associated with the destination node and a connection associated with the virtual port and the particular VLAN (see column 40, lines 13 – 18, wherein the result of the exit port table lookup is the physical port to which the packet should be forwarded implies an association between the logical port and the destination, wherein the VLAN tunnel corresponds to a connection);

acquiring a data packet from the source node, wherein the packet is associated with the particular VLAN and contains a destination address associated with the destination node (see paragraph 40, lines 1 – 3, 10 – 12);

and transferring the packet to the destination node over the connection via the virtual port (see paragraph 40, lines 12 – 13).

Ishwar et al. do not disclose that the virtual port supporting a plurality of connections that are each associated with a different VLAN. However, Casey from the same or similar fields of endeavor discloses a virtual port supporting a plurality of connections that are each associated with a different VLAN (see Figure 5, paragraph 3, paragraph 29, and paragraphs 39-40, in Figure 5, virtual bridge port 400 is connected to virtual bridge ports 402, and 404, wherein port 402 is associated with VLAN 132 and port 404 is associated with VLAN 134).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement a virtual port supporting a plurality of connections that are each associated with a different VLAN as taught by Casey into the method of Ishwar et al.

The motivation for implementing a virtual port supporting a plurality of connections that are each associated with a different VLAN is that it increases the efficiency of the method for transferring data packets.

Ishwar et al. and Casey do not disclose a step of maintaining a single control structure for the virtual port, the single control structure storing information associated with each connection of the plurality of connections, the information including connection status and statistics for each connection of the plurality of connections.

However, Pannell, from the same or similar fields of endeavor, discloses the step of maintaining a single control structure for the virtual port (see column 5 lines 7-11,

maintaining a single address database in multiple VLANs), the single control structure storing information associated with each connection of the plurality of connections, the information including connection status and statistics for each connection of the plurality of connections (see column 4 lines 48-57, the information includes MAC addresses, port identifiers, and information describing the entry, such as age, lock sate, etc., where MAC addresses and port identifiers are broadly interpreted as connection status and age and lock state are broadly interpreted as statistics).

Thus, it would have been obvious to the person of ordinary skill in the art to implement the step of maintaining a single control structure for the virtual port, the single control structure storing information associated with each connection of the plurality of connections as taught by Pannell into the method of Ishwar et al. and Casey in order to save memory (see column 5 line12).

Regarding claims 2 and 29-30, Ishwar et al. disclose the method further comprises the step of applying a port identifier (ID) associated with the virtual port to the Interface Descriptor Block (IDB) database to identify the IDB database entry associated with the virtual port (see Figure 4B, Box VLAN TABLE, wherein the VLAN TABLE corresponds to an interface descriptor block database);

regarding claim 3, Ishwar et al. disclose the identified IDB database entry contains a VLAN ID that represents the VLAN associated with the packet (see paragraph 40, lines 2, Figure 4B, Box VLAN TABLE);

regarding claim 4, wherein the packet contains a VLAN ID that represents the VLAN associated with the packet (see paragraph 40, lines 2 – 3);

regarding claim 12, wherein the connection is a trunked connection (see Figure 3, Box 308 STACKED VLAN TUNNEL);

regarding claim 13, wherein the connection is associated with a connection identifier (ID) (see paragraph 37, lines 8 – 12, wherein 600 corresponds to a connection identifier);

regarding claim 14, identifying an entry in a VLAN ID database that contains a virtual connection (VC) ID that matches the connection ID (see paragraph 40, lines 16 – 18);

regarding claim 15, acquiring an encapsulated packet on the connection (see paragraph 34, lines 13 – 15);

identifying an internal VLAN ID associated with the connection's ID (see paragraph 37, lines 8 – 12, paragraph 40, lines 12 – 18);

and doubly encapsulating the encapsulated packet wherein the doubly encapsulated contains the internal VLAN ID (see paragraph 34, lines 13 – 18);

regarding claim 16, the doubly encapsulated packet is encapsulated in accordance with the Institute of Electrical and Electronics Engineers (IEEE) 802.1Q standard (see paragraph 34, lines 13 – 14);

Ishwar et al. disclose, **regarding claim 18**, in a data network comprising a plurality of nodes, a method for transferring data packets between a source node and a destination node contained in the network, wherein the source node and destination node belong to the same virtual-local-area network (VLAN) (see paragraph 34, lines 6 – 7), the method comprising the steps of:

generating a data packet at the source node (see paragraph 40, lines 1 - 2, receiving packet from customer C1 implies the customer, which is the source has generated a packet) wherein the data packet contains a destination address associated with the destination node (see paragraph 34, lines 12 – 14, wherein 802.1Q formatted packet implies a destination address is contained in the packet);

transferring the packet to a source intermediate node contained in the network (see paragraph 40, lines 1 – 2, wherein the SPED A receives the packet implies the packet is transmitted from the source); at the source intermediate node, (i) acquiring the packet (see paragraph 40, lines 1 – 2, wherein SPED A corresponds to a source intermediate node), (ii) identifying a particular VLAN associated with the packet (see paragraph 40, lines 2 – 4), (iii) identifying a virtual port through which the destination node may be reached (see paragraph 40, lines 10 – 12), (iv) identifying a connection that is associated with the virtual port and the packet's particular VLAN (see paragraph 37, lines 10 – 12, paragraph 40, lines 2 – 6), and (v) transferring the packet over the connection via the virtual port to a destination intermediate node contained in the network (see paragraph 40, lines 10 – 13);

Ishwar et al. fail to teach and at the destination intermediate node, (i) acquiring the packet, (ii) identifying a port through which the destination node may be reached and (iii) forwarding the acquired packet to the destination node.

Casey from the same or similar field of endeavors teaches a virtual port supporting a plurality of connections that are each associated with a different VLAN (see Figure 5, paragraph 3, paragraph 29, and paragraphs 39-40, in Figure 5, virtual

bridge port 400 is connected to virtual bridge ports 402, and 404, wherein port 402 is associated with VLAN 132 and port 404 is associated with VLAN 134); and, at the destination intermediate node (see Figure 2 and paragraph 34, Core-PE 114 situated in node 140 corresponds to destination intermediate node), (i) acquiring the packet (see paragraphs 33-35, the encapsulated packet is forwarded across the SET network to the Core-PE 114), (ii) identifying a port through which the destination node may be reached and (iii) forwarding the acquired packet to the destination node (see paragraphs 33-35, identifying a destination port and forwarding the packet is done with the use of VC label in MPLS label stack);

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement a virtual port supporting a plurality of connections that are each associated with a different VLAN (see Figure 5, paragraph 3, paragraph 29, and paragraphs 39-40, in Figure 5, virtual bridge port 400 is connected to virtual bridge ports 402, and 404, wherein port 402 is associated with VLAN 132 and port 404 is associated with VLAN 134); and, at the destination intermediate node, (i) acquiring the packet, (ii) identifying a port through which the destination node may be reached and (iii) forwarding the acquired packet to the destination node in the method taught by Ishwar et al. in order to allow accurate data transfer.

Ishwar et al. and Casey do not disclose a step of maintaining a single control structure for the virtual port, the single control structure storing information associated with each connection of the plurality of connections, the information including connection status and statistics for each connection of the plurality of connections.

However, Pannell, from the same or similar fields of endeavor, discloses the step of maintaining a single control structure for the virtual port (see column 5 lines 7-11, maintaining a single address database in multiple VLANs), the single control structure storing information associated with each connection of the plurality of connections, the information including connection status and statistics for each connection of the plurality of connections (see column 4 lines 48-57, the information includes MAC addresses, port identifiers, and information describing the entry, such as age, lock sate, etc., where MAC addresses and port identifiers are broadly interpreted as connection status and age and lock state are broadly interpreted as statistics).

Thus, it would have been obvious to the person of ordinary skill in the art to implement the step of maintaining a single control structure for the virtual port, the single control structure storing information associated with each connection of the plurality of connections as taught by Pannell into the method of Ishwar et al. and Casey in order to save memory (see column 5 line12).

Regarding claim 19, Ishwar et al. disclose at the source intermediate node, encapsulating the packet (see paragraph 34, lines 12 – 18);

regarding claim 20, the packet is encapsulated in accordance with the Institute of Electrical and Electronics Engineers (IEEE) 802.1Q standard (see paragraph 34, lines 13 – 14);

regarding claim 24, the connection is a trunked connection (see Figure 3, Box 308 STACKED VLAN TUNNEL).

Regarding claim 25, an intermediate node (see Figure 4A, Box 402) comprising:

a line card coupled to a network wherein the line card is configured to acquire data packets containing destination addresses (see paragraph 59, line 3 - 6); and

a processor(see paragraph 60, lines 1 – 2) configured to (i) establish one or more virtual ports wherein each virtual port is associated with one or more connections and each connection is associated with a virtual-local-area network (VLAN) (see paragraph 40, lines 13 – 18), (ii) associate an acquired packet with a particular VLAN (see paragraph 40, lines 1 – 4), (iv) identify a virtual port associated with a destination address contained in the acquired packet (see paragraph 40, lines 11 – 13, learning the MAC destination address, then forwarding the data through a logical port implies making an association between the logical port and the destination address), (v) identify a connection associated with the VLAN (see paragraph 37, lines 9 – 13, paragraph 40, lines 1 – 4, lines 16 – 18, the VLAN ID is used to look up a logical port which is associated with a connection, therefore, the connection is associated with the VLAN) and (vi) transfer the packet over the connection via the virtual port (see paragraph 40, lines 11 – 12).

Ishwar et al. do not disclose that the virtual port supporting a plurality of connections that are each associated with a different VLAN. However, Casey from the same or similar fields of endeavor discloses a virtual port supporting a plurality of connections that are each associated with a different VLAN (see Figure 5, paragraph 3, paragraph 29, and paragraphs 39-40, in Figure 5, virtual bridge port 400 is connected to virtual bridge ports 402, and 404, wherein port 402 is associated with VLAN 132 and port 404 is associated with VLAN 134).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement a virtual port supporting a plurality of connections that are each associated with a different VLAN as taught by Casey into the method of Ishwar et al. because it increases the efficiency of the method for transferring data packets.

Ishwar et al. and Casey do not disclose a step of maintaining a single control structure for the virtual port, the single control structure storing information associated with each connection of the plurality of connections, the information including connection status and statistics for each connection of the plurality of connections.

However, Pannell, from the same or similar fields of endeavor, discloses the step of maintaining a single control structure for the virtual port (see column 5 lines 7-11, maintaining a single address database in multiple VLANs), the single control structure storing information associated with each connection of the plurality of connections, the information including connection status and statistics for each connection of the plurality of connections (see column 4 lines 48-57, the information includes MAC addresses, port identifiers, and information describing the entry, such as age, lock sate, etc., where MAC addresses and port identifiers are broadly interpreted as connection status and age and lock state are broadly interpreted as statistics).

Thus, it would have been obvious to the person of ordinary skill in the art to implement the step of maintaining a single control structure for the virtual port, the single control structure storing information associated with each connection of the plurality of connections as taught by Pannell into the method of Ishwar et al. and Casey in order to save memory (see column 5 line12).

regarding claim 26, an intermediate node as defined in claim 25 wherein the connections are a combination of connection types (see paragraph 54, lines 4 – 7).

7. Claims 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishwar et al. and Casey in view of Khill.

Regarding claim 9, Ishwar et al. and Casey in view of Khill disclose all the subject matter of the claimed invention as recited in paragraph 3 of this office action.

Ishwar et al. and Casey in view of Khill fail to teach the connection is a point-to-point protocol (PPP) connection.

However, it is well-known in the art at the time of the invention to use a point-to-point protocol connection.

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the connection is a point-to-point protocol (PPP) connection in the method taught by Ishwar et al. and Casey in view of Khill in order to allow safe data transmission by using the encryption feature in a PPP connection.

Claim 21 is rejected the same reason as above.

8. Claims 10, 11, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishwar et al. and Casey in view of Pannell as applied to claim 1 above, and further in view of the background of the invention of Ishwar et al.

Ishwar et al. and Casey in view of Khill disclose, **regarding claim 10**, all the subject matter of the claimed

invention as recited in paragraph 3 of this office action.

Ishwar et al. and Casey in view of Khill fail to teach the connection is an Asynchronous Transfer Mode (ATM) virtual connection (VC).

The background invention of Ishwar et al. from the same or similar field of endeavors teach the connection is an Asynchronous Transfer Mode (ATM) virtual connection (VC) (see paragraph 003, lines 1 – 3).

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the connection is an Asynchronous Transfer Mode (ATM) virtual connection (VC) in the method taught by Ishwar et al. and Casey in view of Khill in order to allow reliable data transfer.

Ishwar et al. and Casey in view of Khill disclose, **regarding claim 11**, all the subject matter of the claimed invention as recited in paragraph 3 of this office action.

Ishwar et al. and Casey in view of Khill fail to teach the connection is a frame relay connection.

The background invention of Ishwar et al. from the same or similar field of endeavors teach the connection is a frame relay connection (see paragraph 003, lines 1 – 4).

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the connection is a frame relay connection) in the method taught by Ishwar et al. and Casey in view of Khill in order to allow efficient data transfer.

Ishwar et al. and Casey in view of Khill disclose, **regarding claim 22**, all the subject

matter of the claimed invention as recited in paragraph 9 of this office action.

Ishwar et al. and Casey in view of Khill fail to teach the connection is an Asynchronous Transfer Mode (ATM) virtual connection (VC).

The background invention of Ishwar et al. from the same or similar field of endeavors teach the connection is an Asynchronous Transfer Mode (ATM) virtual connection (VC) (see paragraph 003, lines 1 – 3).

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the connection is an Asynchronous Transfer Mode (ATM) virtual connection (VC) in the method taught Ishwar et al. and Casey in view of Khill in order to allow reliable data transfer.

Ishwar et al. and Casey in view of Khill disclose, **regarding claim 23**, all the subject matter of the claimed invention as recited in paragraph 9 of this office action.

Ishwar et al. and Casey in view of Khill fail to teach the connection is a frame relay connection.

The background invention of Ishwar et al. from the same or similar field of endeavors teach the connection is a frame relay connection (see paragraph 003, lines 1 – 4).

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the connection is a frame relay connection) in the method taught by Ishwar et al. and Casey in view of Khill in order to allow efficient data transfer.

Allowable Subject Matter

9. Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim **and** any intervening claims.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. **Examiner's Note**: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to

specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAO SINKANTARAKORN whose telephone number is (571)270-1424. The examiner can normally be reached on Monday-Thursday 9:00am-3:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pao Sinkantarakorn/
Examiner, Art Unit 2416

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2416

PS